

Categorie Premio Accessibilità Sostenibilità Qualità della vita

Product Name HYDRO-NET

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Categorie Premio

Accessibilità

Sostenibilità

Qualità della vita

Description of innovation social values

- product category
- formal and functional features
- problems solved by innovation
- user
- field of application

Hydro-Net is an urban-architectural proposition for San Francisco, CA of the year 2108. Hydro-Net proposes to revision the city's infrastructure via a new network of multipurpose subterranean tunnels. This network also serves the harvesting of fresh water from existing aquifers below the city and fog in the atmosphere, as well as tapping of power from geothermal reserves beneath the city. Ultimately Hydro-Net aims to enable increased population density and urban programmatic possibilities, while decreasing the region's carbon footprint and fossil fuel reliance.

The design proposes to replenish San Francisco's outmoded transportation and water and power grid with an expandable network of subterranean tunnels. The tunnels are proposed to be robotically built with nano-tube structured walls, as a means to safely store reserves of hydrogen fuel produced from algae farming in a new aquaculture zone along San Francisco Bay. This aquaculture zone is proposed to re-occupy baylands presumably inundated with rising waters from global warming, and consists of a new urban landscape of algae ponds and algae towers, which also serve to house a residents in a more dense forms of urban living. The tunnels' main function is to store and direct the flows of water, power and streams of hydrogen-fueled hover car traffic beneath the city, removing higher speed traffic from the city ground level. As such, it is presumed the Americans' love of individual vehicles over mass transport can be accomodated sustainably.

While new subterranean urban programs are envisioned (spas, theaters, etc) to be fostered by Hydro-Net's tunnel array; new urban architectures and social spaces are also envisioned as 'outcroppings' or 'blooms' above the city's ground surface. These include "Fog Flowers" and "Geothermal Mushrooms" located at key nodes along the Hydro-Net network relative to geothermal and fog-harvesting sources below and landmark locales above ground.

Description of technical features

- operations
- technology

- Urban algae-farming for raw material to produce hydrogen fuel
- Robotically-built nanotube-structured urban tunnel network
- Hydrogen-fueled auto-piloted hover car personal/mass-transport system
- CNC-fabricated high rise towers for human residence and vertical algae farming
- Nano-engineered fog-harvesting surfaces
- Geothermal urban power generation system

Dimensions

Seven miles by seven miles (city of San Francisco)

Materials

Structures proposed to be built via nano-tube technologies and 1:1 3D printing technologies envisioned to be in place for large scale structures by the year 2108.

Certifications

Benefits for environment

Reduction of urban carbon footprint, reduction of fossil fuel use and dependence, reduced impact of urban population on region and globe.

Benefits for human being

Provision of cleaner, more accessible urban environment, with more diverse programmatic mixture, able to safely and interestingly house an increased population density, with respect for preserving the existing regional landscape.